

Amendment 400

Contract No. 229944

To the Contract for the Design, Implementation, Operation and Maintenance of the Regional Fare Coordination System

This Amendment 400 to the Contract for the Design, Implementation, Operation and Maintenance of the Regional Fare Coordination System is entered into this 9th day of August, 2017, by and between Vix Technology (USA) Inc (formerly known as ERG Transit Systems (USA Inc), a California corporation and wholly owned subsidiary of Vix Mobility Pty Ltd, an Australian corporation, (hereinafter referred to as the "Contractor") and each of the following seven public transportation agencies (hereinafter referred to individually as an "Agency" or collectively as the "Agencies"):

1. Central Puget Sound Regional Transit Authority ("Sound Transit")
2. King County ("King County")
3. Kitsap County Public Transportation Benefit Area ("Kitsap Transit")
4. Pierce County Public Transportation Benefit Area ("Pierce Transit")
5. Snohomish County Public Transportation Benefit Area ("Community Transit")
6. City of Everett ("Everett")
7. State of Washington, acting through the Washington State Department of Transportation, Washington State Ferries Division ("WSF")

Recitals

- A. Effective April 29, 2003, each of the Agencies and the Contractor entered into Contract #229944 ("Contract") to implement a Regional Fare Coordination System ("RFC System") to establish a common fare system utilizing smart card technology. The Contractor is responsible for the development, implementation, operation and maintenance of the RFC System as specified in the Contract.
- B. The Agencies and the Contractor desire to amend Section VI of Exhibit 9, Price Schedule Special Programs, to compensate the Contractor for performing the development work necessary to facilitate the migration of ORCA usage data to an internal ORCA Agency data repository to help validate and drive ngORCA reporting requirements. This work is performed per *CR-13002 ngORCA Data Migration Support v6.0* as approved by the Agencies on July 19, 2017.
- C. The Parties agree that the Work necessary to modify the ORCA system as directed will be performed and compensated as described below.

Agreement

Section 1.0 Description of Work

Summary

- 1.1 The Contractor will use Oracle GoldenGate to migrate and synchronize the data objects between databases.
- 1.2 Once fully implemented the Production Disaster Recovery (DR) site will be used as the source database.

Prerequisites

- 1.3 The Agencies will be responsible for setting up, configuring and maintaining Oracle GoldenGate on target database. This is required to retrieve data migrated from the source database to staging server.
- 1.4 The staging server will be a Linux node hosting Oracle RDBMS binaries (OEL/RHEL 5-UL6, 6-UL1, 7 or SLES 11).
- 1.5 The Agencies will stipulate what database product they intend to use on the target database.
- 1.6 The Contractor will verify that the selected database product will be compatible with the solution.
- 1.7 The current assumption is that Agencies will use an Azure hosted SQL Server.
- 1.8 The Agencies will be responsible for setting up, configuring and maintaining the Virtual Private Network (VPN) connection required to access the DMZ (Demilitarized Zone) from their network (hosting the target database).
- 1.9 The Contractor will provide support as needed to the Agencies to install and configure Oracle GoldenGate on the target database.
- 1.10 The Contractor will assist with other environmental configurations (i.e. firewall updates)

Testing

- 1.11 Prior to deployment, the Contractor shall configure an instance of Oracle GoldenGate to replicate data from Regional Test Bed to a staging RHEL (Linux server) in a DMZ and then to the (target) database to best mimic the production deployment.
- 1.12 This environment will be used to verify the configuration and implementation of the solution as described in production implementation (1.15 –1.33)

1.13 Once testing has been verified, Oracle GoldenGate will be completely de-installed from the test environment by the Contractor.

1.14 Post deployment, if the Agencies would like the Contractor to spin up a test environment a new change request must be submitted.

Production Implementation

1.15 The Contractor will migrate the following data sources from the Production Disaster Recovery site to a staging server.

Data Sources

- **CUT** (schema)
 - **CUT_PI_ENTRY** (table)
 - Contains Purse, pass and multiride use on entry transactions
 - **CUT_PI_EXIT** (table)
 - Contains Purse, pass and multiride use on entry transactions
 - **CUT_PI_FINANCIAL** (table)
 - Contains a wide range of product issuance, revalue, reversal, refund, recovery, write off and surcharge transactions
 - **CUT_PI_JOURNEY** (table)
 - Contains Purse, pass and multiride use journey transactions and product multiride rebate on exit transaction
- **BUSINESS_ACCOUNT** (schema)
 - **INSTITUTION** (table)
 - Contains institution details, such as name, address, contract dates
 - **INSTITUTION_AGREEMENT** (table)
 - Contains agreement details, such as (unique) IDs, addresses, lead agent contact details
 - **INSTITUTION_CARD_GROUP** (table)
 - Contains card group IDs and details (such as suspension dates) associated with institutions (institutional cards are associated to card groups belonging to institutions)
 - **INSTITUTION_CARD** (table)
 - Contains (institutional) card serial numbers associated with card groups
- **XWEB** (schema)
 - **CARD_DETAILS** (table)
 - Contains (all) card serial numbers and associated cardholder IDs (does not provide card verification numbers)
 - **CARDHOLDER_ACCOUNT_DETAILS** (table)
 - Contains all cardholder account details (i.e. Name, addresses, contact details and other PII data)

1.16 The staging server will be located in the DMZ.

1.17 The Contractor will be responsible for the configuration and maintenance of the staging server.

1.18 Oracle GoldenGate will migrate data (in the form of trail files from the Production Disaster Recovery site Offline Server (OFS) to the staging server).

- 1.19 The Contractor will work collaboratively with the Agencies via iterative testing and development to support data source delivery incrementally.
- 1.20 The Agencies will be responsible for providing, configuring and maintaining the target database, and the Oracle GoldenGate instance that resides on it.
- 1.21 The Contractor will provide support to the Agencies in configuring the Oracle GoldenGate instance on the target database in order to access the Oracle GoldenGate files migrated to proxy server.
- 1.22 The Contractor will provide the Agencies the required GoldenGate licenses (Named User Plus) and will be responsible for the ownership of these licenses.
- 1.23 If the Agency target database has more than x1 processor (as determined by the Oracle Core Processing Factor) then additional licenses will be required.
- 1.24 Once transferred, the Agencies shall be responsible for all data contained on their (target) database. This includes any backups of data.
- (a) The Contractor shall not be responsible for any data lost during transfer from the Production Disaster Recovery (DR) site.
 - (b) The Contractor shall not provide support once data has reached the target database.
- 1.25 The data sources in 1.15 do not provide Configuration Data (CD) context data.
- (a) i.e. mapping of internal trip/route IDs to that provided in import sets.
- 1.26 None of the data sources referenced in 1.15 contain credit card details.
- (a) However, the CARDHOLDER and BUSINESS_ACCOUNT data sources do contain business names, names of individuals, addresses, contact details and other PII data.
- 1.27 The Contractor can provide a size estimate of the data sources once the Agencies determine what data sources to migrate.
- 1.28 The Contractor will not be responsible for training Agency resources or Agency third party contractors in regards to data transferred to the target database outside of documentation to be provided as part of this body of work (i.e. ERD and data dictionary).
- 1.29 Only data currently available on the Offline Server (OFS) at the time Oracle GoldenGate is activated will be migrated to the target database
- (a) Any purged data will not be migrated

- 1.30 Oracle GoldenGate will require installation on the source and target databases as well as the staging server.
- 1.31 Oracle EM Cloud Control 13c provides a plugin for Oracle GoldenGate for system monitoring.
- 1.32 The Agencies shall raise additional, separate change requests if they require any additional data sources

Optional CUT Schema Tables

- 1.33 The following nine optional CUT schema tables are available for an additional fixed package price of \$34,290 this is in addition to the \$250,862 solution price.

- **CUT** (schema)
 - **CUT_CI_BLOCKING** (table)
 - Contains card block and unblock transactions
 - **CUT_CARDHOLDER_FINANCIAL** (table)
 - Contains remote purchase and reversal transactions
 - **CUT_CARDHOLDER_FEE** (table)
 - Contains fee and remote fee (and reversal) transactions
 - **CUT_CI_FINANCIAL** (table)
 - Contains card fee and revenue allocation transactions
 - **CUT_FINANCIAL** (table)
 - Contains a wide range of financial transactions, such as institution order payments, other fund payments
 - **CUT_PI_BLOCK** (table)
 - Contains product block and unblock transactions
 - **CUT_PI_MAINTENANCE** (table)
 - Contains auxiliary product transactions, such as product delete, autoloan update, replacement transactions
 - **CUT_RIDERSHIP_STATS** (table)
 - Contains ridership events transaction
 - **STREAMING_SESSION_HISTORY** (table)
 - Provides association of streaming session IDs to number of transactions streamed in that session, along with the session dates (start and end)

Documentation Updates

The Contractor will finalize and deliver documentation by February 28, 2018. Draft documentation will be made available prior to this date

- (a) SEA-00TBD Data Migration Using Oracle GoldenGate (or similar)

Section 2.0 Schedule

- 2.1 The work described in Section 1.0 will be completed by December 31, 2017.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the sufficiency of which is hereby acknowledged, the Parties hereby agree to amend the Contract as follows:

Section 3.0 Compensation Changes

Section VI (Implementation) of Exhibit 9, Price Schedule, is hereby amended to read as follows:

VI. IMPLEMENTATION

SPECIAL PROGRAMS

LUMP SUM COST

Amendment No. 400

To facilitate the migration of ORCA usage data to an internal ORCA Agency data repository to help validate and drive next generation ORCA reporting requirements	\$250,862
Optional Cut Table Schema (1.33)	\$34,290
TOTAL	\$285,152

Section 4.0 Other Terms and Conditions

All other provisions of the Contract not referenced in this Amendment Four Hundred shall remain in effect.

IN WITNESS WHEREOF, authorized representative of the Agencies and the Contractor have signed their names in the spaces provided below.

Vix Technology (USA) Inc.

By: [Signature]
Its: Interim GM

Date: 8-8-17

The Agencies

By: [Signature]
Their: ORCA operators Manager

On behalf of the Agencies

Date: 8/9/17